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ON THE ALPHABETS OF THE INDIAN ARCHIPELAGO.

BY JOHN CRAWFURD, F.R.S.

Read before the Society, 12th December 1849.

The use of letters has been immemorially known to all the more civilized nations of the Indian Archipelago, of the brown-complexioned, lank-haired race, and many alphabets, at once distinct from each other, and not borrowed from any foreign source, are to be found among them, from Sumatra to the West and South, to Celebes and the Philippines to the East and North.

Modern writers have supposed that the earliest writing was pictorial or hieroglyphic, and that, in process of time, this became vocal or phonetic, ending in literal alphabets. Of the truth of this theory, however, no evidence is to be discovered in the insular languages. Hieroglyphic writing is nowhere to be seen on any ancient monument; the letters of the numerous alphabets bear no resemblance to any object of nature, animate or inanimate; the names of the letters simply express their sounds; and the word for an alphabet consists, as with ourselves, only of an enumeration of a few of the first letters in order, of which they are composed.

The Javanese is certainly the most perfect alphabet of the Archipelago, and a brief account of it will give a general notion of the rest, which, although they differ in form, bear to it, in principle, a common resemblance. It has a distinct and invariable character for every sound in the language, and so far, therefore, it is a perfect system. The consonants amount to 19, and I represent them in Roman letters as follows:—b, ċ, d, 'd, g, j, k, l, m, n, ñ, p, v, s, t, 't, w, y. Besides these there is the aspirate, which always follows a vowel, and never aspirates a consonant. The vowels are 6, viz.:—a, á, e, i, o, u. The diphthongs are 2, viz., ai and au, but have no characters, being expressed only by their elements.*

* The powers, which I have given to the Roman letters, are so nearly those which they have among the southern nations of Europe, that very little explan-

With the exception of an initial a, the vowels are not considered substantive letters, but viewed as mere orthographic marks, or, as the Javanese express it, “the clothing” of the letters, that is, of the consonants. The mark of the vowel á is placed over the consonant, of e before it, of i above and to the right of it, of o, which is a double one, part before and part after it, and of u under it.

The initial vowel a, standing alone, has its own proper sound, but, as just stated, it is considered a substantive letter, and when “clothed,” as the Javanese express it, with the mark of any of the other vowels, it becomes such vowel, but as an initial letter only.* The application of the vowel marks to the consonants always implies, that the vowel is annexed to, and never that it precedes, the consonant.

Every consonant is a syllable, in which the vowel, a, annexed, is understood; and thus far the Javanese alphabet is syllabic, a character common to it with all the alphabets of the Archipelago. There must, of course, be some contrivance for eliding the vowel, and this is rather of a cumbrous nature. At the end of a word it is done by an appropriate orthographic character, but in the middle of one it is effected by a set of new consonant characters, two of which are on the same parallel with the proper consonants, and the rest placed below them. The presence of these indicates, that no vowel precedes them. The letters n, r, and the aspirate, which I express by the Roman letter h, when at the end of a word or syllable preceded by a vowel have distinct and appropriate characters.

ation is necessary. The letter marked thus, ċ, has, in all cases, the sound given to it in Italian before e and i. The ·d and ·t marked with a dot are palatals, and those without it, dentals. The letter ñ with a dot is the nasal ng, and ñ is the Spanish letter, with a sound which exists with us in such a word as *union*. The letters f and z do not exist in the Javanese, or any existing written tongue, as a native sound, and are only to be found in a few rude languages.

* The initial a, it is to be remarked, has been mistaken by European writers for a mild aspirate, and expressed, consequently, by the letter h. I fell into this error myself, and I find that Messrs Roorda and de Groot, in their excellent grammar and vocabulary of the Javanese, have done the same thing. We owe the correction of this mistake, and the true meaning, first to Colonel Lowe, and after him to Baron William Humboldt.

The liquids of the Javanese language are l, r, w, and y, and these alone coalesce with other consonants; the letter r, when doing so, having a peculiar character for the purpose, with another when following a vowel, and closing a syllable. In all, no fewer than 50 characters, including indispensable orthographic marks, are necessary towards writing the language, independent of 8 capital letters, and some syllabic abbreviations, forming a system very complete for its purpose, but rather complex. To these again must be added the ten digits or numeral characters, which, from the resemblance of some of them to the letters of the alphabet, and their existence on monuments, at least 700 years old, are most probably of native invention like the alphabet itself.

The Javanese alphabet, like all the others of the Archipelago, is written from left to right. Each letter is distinct and unconnected, and the writing is perpendicular, and not slanting. The letters have an oval rather than a round or square shape, and each is formed not by several strokes of the pen, but by a single effort. On the whole, they are so well formed, that a carefully written manuscript, if not handsome or showy, has, at least, a neat appearance.

The Javanese alphabet, although always exhibited in the same order, has no vocal classification after the Hindoo model. The dental and palatal d, for example, are separated by five other letters that have no organic connection with them, and the dental and palatal t by eleven equally unconnected. The letter a begins, and ñ ends it. The first five letters are a, n, č, r, k, which, pronounced with the inherent, a, form the word anačarakā, the name of the alphabet, or, in other words, the a, b, c, of the Javanese.

In the character thus described are written, the proper Javanese, the Sunda, the Bali, and, I believe, the Lombok. The Sunda and Bali alphabets, however, want the palatals d and t. Altogether, including Palembang in Sumatra, it is probable that the Javanese alphabet is current among no less a population than twelve millions.

This, however, is not the only alphabet that has been known to the Javanese. In the work of Sir Stamford Raffles, there are excellent representations of not less than

twelve different characters found on ancient monuments of stone or brass. One of these is Dewanagri, such, according to Sir Charles Wilkins, as was current on the continent of India about nine centuries ago. A second character is nearly identical with the old square Pali; and eight are but ancient forms of Javanese writing. There is, at least, one example of a character distinct from the modern Javanese, and from all of these found in the modern parts of the island; and we may safely conclude, therefore, that the inhabitants of Java have invented two alphabets.

In Sumatra, beginning from the West, the first evidence we have of a native written character is found among the Bataks; and it is singular enough, that a nation occasionally practising cannibalism should possess a knowledge of letters. There was assuredly nothing of the kind in Europe or continental Asia, until long after men had ceased to eat each other.



The substantive characters of the Batak alphabet are the same as those of the Javanese, with the exception of the letter *ċ*, and the palatals *đ* and *ṭ* which it wants. Among these are not only reckoned *a*, as in Javanese, but also *i* and *u*, so that the whole number, including the aspirate, which is reckoned among them, is no less than 20. But the real number of the consonants, omitting the aspirate, is but 16.

The vowel marks are only four, representing *e*, *i*, *o*, and *u*. They are used with the consonants as in the Javanese alphabet, but they are not, as in that, applied to the vowel *a*, nor to the others included among the substantive letters. As in Javanese, every consonant is a syllable, ending in the inherent *a*; but I can discover no other contrivance for eliding this vowel except its supercession by the application of the vowel mark. If this be the case, every word must begin either with a consonant or of one of the four vowels *a*, *e*, *i*, or *u*, and end in a vowel or the nasal, for which the alphabet has a peculiar mark.

The Batak alphabet does not, like some others of the Archipelago, follow the organic classification of the Hindu alphabets; but it is not, in this respect, wholly arbitrary, like that of Java, for it has a peculiar arrangement of its own. It begins with the vowel *a*, and ends with *i* and *u*. The

aspirate immediately follows the letter a. Then come in succession two dentals, d and t; two liquids, r and l; three labials, b, p, and w; two palatals, y and j; and then the sibilant.

Mr Marsden would appear to think, that the existence of the metrical arrangement of the Sanskrit alphabet was at one time general over all the alphabets of the Archipelago; and, although he admits the difficulty of proving any filiation, considers that all of them were taken from the Hindus. But as there is no resemblance between the Malayan and Indian letters, and as the Hindu classification is but partial, it is surely more reasonable to conclude, that the alphabets are distinct, and that the partial metrical arrangement is but an accidental innovation.

The form of the Batak letters is generally horizontal, the body of each letter being always so, and the vertical or the diagonal strokes, to distinguish one letter from another, being, as it were, only supplemental. The letter p, for example, is a simple horizontal stroke, thus —. The vowel i consists of three diminishing downwards, thus , while u consists of three diminishing upwards, thus . The aspirate consists of a horizontal dash with two small vertical strokes. The writing, in fact, seems to consist of a few simple scratches or hair-strokes. In this there is no discoverable likeness of any object in nature, organic or inorganic, —nothing whatever to indicate that vocalic writing has ever been immediately derived from pictorial. “In their form,” says Mr Marsden, “the characters do not, even partially, resemble those of any other alphabet.”

The next alphabet we meet with, proceeding eastward, is the Korinchi, found in the country of the same name which borders on Menangkabau, the supposed parent country of the Malay nation. I have never seen any other specimen of this alphabet than that given by Mr Marsden, nor had he himself seen any other example than the original from which it was taken. It is unsatisfactory, nor does the description agree with the plate. The number of characters given in the latter is 29, but the description makes the vowels a, i, o, and u, substantive letters, while the first of these only is found

among them. Among the characters in the plate there are two for the letter a, two for the aspirate, two for k, and two for ñ, while there are five characters expressing sounds represented by Mr Marsden by the double letters nd, ns, nč, np, and nt. These last are most probably syllabic, and not literal characters.

In the Korinchi alphabet we find no dental d, and no palatal 'd or 't. The vowel marks, the *sanjata*, or armour, as the Malays call them, are, in reality, only two, viz.,—for i and u, the first designated by a simple point after and above the consonant, and the last by one below it. The vowel a, as in all the other alphabets, is inherent in every consonant, and there are no other means of eliding it except its supersession by the application of the vowel marks. A single point over a consonant expresses the nasal ñ following the vowel a inherent, or a consonant qualified by another vowel mark. Two points express an aspirate following a vowel at the end of a word or syllable.

In the Korinchi alphabet there is no attempt at arrangement or classification. It begins with t, and ends with r, labials, palatals, nasals, and gutturals, being jumbled together in thorough disorder. The letters are formed by straight scratches, generally more vertical than those of the Batak, but, in some instances, also horizontal. In this respect it differs wholly from the latter. Thus a horizontal stroke in the Batak is the representative of p, and in the Korinchi of t. Three strokes declining downwards in the Batak, represent the vowel i, but in the Korinchi, the compound character ns. On the whole, the Korinchi alphabet must be pronounced a very rude one.

We come next to the Rejang, the alphabet of Lemba and Pasummah, on the western side of Sumatra. This consists of 23 substantive characters. Among these are included the aspirate, and the vowel a with four letters, which are apparently syllabic compounds. The actual number of consonants, excluding the aspirate, is but 17, the palatal 'd and 't of the Javanese being wanted. Looking at the alphabet, however, the number of written characters is found to be 32, which

arises from some of them being in duplicate and triplicate forms.

The vowel *a* is, as usual, inherent in every consonant. This is rendered mute by an express orthographic mark, as in Javanese, called “*mati*” or death. The vowel marks are five in number, viz., for *e*, *i*, and *u*, with the diphthongs *ai* and *au*. The vowel *o* would seem not to belong to the language.

In this alphabet we have the first example of a classification of the consonants after the Hindu model. It begins, like the *Dewanagri*, with the gutturals, accompanied by a corresponding nasal. The dentals and the palatals follow successively. Then comes the single sibilant of the language, and the last class consists of the liquids *r*, *l*, *w*, and *y*. The last letter of the alphabet is the vowel *a*.

Eight letters of the *Rejang* alphabet, or at least some one form of them out of two or more, correspond with those of the *Korinchi*; so that it is certain, for the identity is generally complete, that the one nation must have borrowed from the other. Four-and-twenty of the *Rejang* substantive letters will still remain distinct, quite sufficient to prove it a distinct, and most probably an original alphabet.

The *Rejang* letters are formed of upright or oblique scratches or strokes, but not, as in the *Batak* and *Korinchi*, also of horizontal ones. As examples, *n* is a rudely formed Roman *M*, and *y* is a double *u* *W*. Upon the whole, the *Rejang* alphabet is more perfect than either the *Batak* or *Korinchi*.

The *Lampung* nation, which occupies that portion of the south-western side of *Sumatra* which lies opposite to *Java*, divided from it only by the straits of *Sunda*, has its own peculiar alphabet, which consists of 19 substantive letters, the vowel *a*, and the aspirate being included among them. The consonants correspond in power exactly with the *Javanese*, the palatals *‘d* and *‘t* excepted, which the *Lampung* does not contain.

Every consonant includes, as in the other alphabets, the inherent vowel *a*. There is a peculiar character for rendering it mute, analogous in power, but not in form, to that of the

Javanese. The vowel marks are 6 in number, namely, for e, i, o, u, and the diphthongs ai and au.

Although the actual number of substantive characters expressing distinct sounds be but 19, the number presented in the scheme of the alphabet is no fewer than 44. This arises from several consonants having more than one representative, some two, some three, and some even four. In examining this numerous list, two of them will be found common to the Korinchi and Rejang, and 5 common to the Rejang.

The Lampung, like the Rejang, has the Hindu classification, but it is not so correctly followed ; the vowel a and the sibilant are found out of place, and thrust in among the liquids.

The Lampung letters have a good deal of that angular, linear, and meagre form, which I have described as characterizing the other Sumatran alphabets, but certainly much less. About one-third of them are well rounded, formed by a single effort of the pen, or style and exhibiting some of the superior skill displayed in the formation of the Javanese letters, but from which, however, they are very distinct.

Two of the languages of Sumatra, the Achin and Malay, have no native alphabet, but are written in the Arabic character, with some indispensable supplemental letters. This has been owing to the conversion of those who speak them to the Mahometan religion, which had its beginning in the commencement of the thirteenth century, A.D. 1206. When we see ruder nations in possession of their peculiar alphabets, it is not likely that these more civilized ones should be without them, but we certainly possess at present no clear or certain vestige of their having actually existed.

On the opposing surfaces of an unhewn nodule of sandstone, where it had been split, there is in Singapore a very rude but long inscription in an unknown character. The only people who are known to have occupied Singapore for any length of time are the Malays, who, after emigrating from Sumatra, settled here, and made it the seat of their government for nearly a century, and this before their conversion to the Mahometan religion. It seems not improbable, then, that the inscription in question was in their native character,

—most likely in some antique form of it, as is the case with the monuments of Java and of Birma, in which the modern letters are never seen. It might indeed be suspected, that the inscription was the work of the Javanese, who are known to have expelled the Malays ; but the rudeness of the monument, so unlike everything in Java, makes such a supposition very improbable.

In his journey to Menankeban, Sir Stamford Raffles discovered three different inscriptions, the characters on which he considered to be identical with those of the majority of inscriptions in Java, that is, that they consisted of ancient Javanese writing. As Sir Stamford, however, was unacquainted either with the ancient or modern Javanese, and had at the moment no able native assistance, as he constantly had in Java, his conclusion must be considered doubtful, and the writing may, on further examination, turn out to be the ancient writing of the Malays, the people in the heart of whose country the inscriptions were found.

After quitting Sumatra and Java, proceeding eastward, the first example of a native alphabet we meet with occurs in Sumbawa, which is ascribed to the nation called Bima. This character is no longer in use, but has been long obsolete, having been superseded by the current alphabet of Celebes.

Sir Stamford Raffles' work contains a good engraving of this old alphabet, but, unfortunately, without the vowel marks, or any other explanation, except the naked description of the letters. Including the vowel *a* and aspirate, it contains no fewer than 32 characters, 9 of these are aspirates of other consonants, one, the palatal 'd, known only besides to the Javanese, and two represent the letter *f* and *z*, which are unknown to any other native alphabet of the Archipelago. Thus, as far as consonants are concerned, it is far more copious than any of the other native systems.

The Bima alphabet does not possess the Hindu classification. Even the aspirated consonants are not generally placed in juxtaposition with the unaspirated. The letters seem boldly formed, and are not mere scratches like those generally of the Sumatran alphabets. As examples,

the aspirated d, y, and the simple aspirate, are represented by characters which respectively much resemble a large g, k, and h in ordinary European handwriting, thus, G, K, H.

Celebes appears to have produced two distinct alphabets, the one at present in use over the whole island, and which has extended to Bouton and Sumbawa, or wherever else indeed the Bugis nation has settled or colonised.

The modern Bugis alphabet consists of 23 substantive characters. One of these is the vowel a, another the aspirate, and the third a compound letter. The palatal 'd and 't of the Javanese are wanting, and it has not the letter y, possessed by all the western alphabets. It is classed after the Hindu manner, into gutturals, labials, palatals, liquids, and a sibilant, each of the three first classes having its corresponding nasal. But each of these first classes has added to it after the nasal, a letter which appears to be an aspirate of the first letter in the order of each series. Thus the consonants are made to amount to 20 in number.

As usual, the final a is inherent in every consonant, and also in the aspirate. The vowel marks are four, viz., for e, i, o, and u. These are applied to the consonant and aspirate, in the ordinary manner, and also to the letter a, as in Javanese. There is no sign of elision, for, as a general rule, every word and syllable in this language ought to terminate either in a vowel or the nasal n, for which there is an orthographic mark. There are, however, some exceptions to this rule. Consonants are made to follow other consonants, without the intervention of vowels, or to end words, as aspirates, when they are not expressed in writing. Thus the word *makunrai*, woman, is written *makuri*, and the n is left to be understood; and *linroh*, the forehead, is written *liro*, the n being understood, as well as the aspirate, for which, except as a substantive letter, when it would have an inherent a, there is no character. All this shows that the Bugis alphabet is imperfect, and for fulness and precision not comparable to the Javanese.

In form, the body of the Bugis characters consists, for the most part, of small segments of circles, running horizontally, the letters being distinguished from each other by little pro-

cesses,—by being double or single,—by being inverted or supine, or by one or more dots over them. It may safely be said that the Bugis letters bear no resemblance to those of Sumatra, of Java, or even to the obsolete alphabet of Sumbawa.

Sir Stamford Raffles has given an engraving of another alphabet of Celebes, said to be found in old manuscripts. It consists of 18 characters, the vowel *a* being one, and the rest consonants, not including the aspirate, which is wanting, as well as the three aspirated consonants of the current alphabet. It has the classification of the Dewanagri, and in point of form differs wholly, not only from the alphabet in use, but from every other of the Archipelago. The last alphabet of the Archipelago is the Philippine, that of the Tagala nation of the great island of Lucon or Luconia, the only one existing in the whole of this great group, but which seems at one time to have been used among all the more cultivated tribes of the neighbouring islands, having spread even to Mindano and the Sulus. The Philippine alphabet is more meagre than that of any of the western nations of the Archipelago, and consists of no more than 15 substantive letters, including the vowel *a* and the aspirate,—consequently of no more than 13 consonants. The letters *č*, *j*, *ñ*, and *w*, universal in the languages of the west, are wanting in it, not to say the palatals *'d* and *'t* of the Javanese.

The vowel characters are three, expressing *e*, *i*, and *o* or *u*. The vowel *a* is inherent in every consonant, and the vowel marks have the same application to substantive letter, the vowel *a* included, as in Javanese. The form of the letters is rather bold, and more complex than that of the Sumatran alphabets. The consonant, *y*, is represented by a character which much resembles an Italic *V*, and *m* and *p* have the same form, with a small distinctive process. It has adopted, but more imperfectly than the alphabets of Celebes and Sumatra, the Hindu classification.

We have then, in all, throughout the Archipelago, no fewer than nine distinct alphabets, every one of which appears to me to be a separate and a native invention. But they are not only distinct from each other; they differ equally from all

foreign alphabets. Some, indeed, have fancied that the Malayan alphabets have been borrowed from the Hindus, but there is assuredly no solid ground for such an hypothesis. Some improvements in details, there is no doubt, they did receive from this source, but, on examination, they are not found to be essential. The most striking of them is the organic and rhythmical classification. But two of the alphabets of Sumatra, the obsolete alphabet of Sumbawa, and the Javanese alphabet, have not adopted this arrangement. The last of these is the most remarkable instance, for it was the one of all the characters of the Archipelago most amenable to Hindu influence, as is sufficiently attested by the greater number of Sanskrit words in the language of Java, and by the existence in that island of numerous Hindu monuments, including inscriptions in the Dewanagri, side by side with those in the ancient native writing.

Some minor details may also have been borrowed from the Hindus, as the mark for eliding a vowel, the point over the consonant to express a nasal following a vowel, and closing a syllable, the visarga or mark of aspiration after a vowel, and possibly the mark for the vowel u. These, however, are by no means common to all the alphabets of the Archipelago. I do not consider the a, inherent in every consonant, to be taken from the Hindus, although it be common to their alphabets. It seems to be simply a rude and imperfect manner of signifying all the vowels, before the discovery of marks for the vowels of less frequent occurrence, when it was appropriated to the principal vowel a, whether long or short.

In fact, the main characteristic of the Malayan letters, their differing among themselves, and their differing equally from all foreign letters, leads to the inevitable conclusion, that each alphabet was a separate and independent invention, made in all likelihood in the localities in which we now find them. If this be the case, the kind of fertility of invention, which the fact evinces, is a curious contrast to the utter absence of it in rude and early western Europe, which never invented an alphabet, although in substantial civilization, it is not to be imagined that the natives of Java and

Sumatra 2000 years ago, were superior to the energetic inhabitants of Germany, Gaul, and Britain, at the same time.

What causes conduced to this early invention of letters among the Malayan nations, and at some very different and distant points, it is not very easy to say. It is certain that the discoveries must have been preceded by a very considerable advancement in civilization, such as would afford leisure to some class of men to attend to such things. That class was unquestionably a priesthood of some kind, and the first and earliest use of letters would assuredly be, not for the common conveniencies of life, or even for its amusements, as in a more advanced stage, but for the sheer purpose of what was little better than conjuration or incantation.

The development of a civilization in which the invention of letters sprang up, would require that the natural circumstances of a country should be favourable. The territory must be sufficiently large, and sufficiently fertile and easy of cultivation, to generate a population numerous enough for its own defence, and therefore to afford sufficient leisure to any class of its inhabitants. No respectable amount of civilization has ever arisen, and no letters have ever been invented in any country of the Archipelago, destitute of these advantages.

The nine alphabets of the Archipelago are the produce of five large islands only out of the innumerable ones which compose it. The most fertile and civilized island, Java, has produced the most perfect alphabet, and that which has acquired the widest diffusion. The entire great group of the Philippines has produced, and that in its greatest and most fertile island only, a single alphabet. Even this one is less perfect than the alphabets of the western nations, in proportion as the Philippine islanders, when first seen by Europeans, were in a lower state of civilization than the advanced nations of the west of the Archipelago.

The Malayan Peninsula and Borneo, extensive as they are, have never given rise to an indigenous civilization sufficient to raise the inhabitants beyond the condition of small and miserable communities, and hence no indigenous alphabet can be traced to them. Their more civilized inhabitants are

invariably stranger emigrants. This must be owing to the absence of a certain kind of fertility in the land, available to the rude and feeble efforts of native industry, such as elsewhere gave rise to a concentrated population,—to leisure and to letters.

No kind of native writing can be traced to the Spice Islands, which, notwithstanding their rich native productions, are incapable of yielding corn, iron, or cattle, the rough staples of early civilization, and without the presence of which letters have never been invented or existed. In the great island of New Guinea, with its savage negro population, and with the same deficiencies, the presence of any kind of writing is not reasonably to be looked for.

No trace of a written character has been found in the wide extent of the islands of the Pacific. Most of them are probably too small to have furnished a population at once sufficiently numerous and concentrated to generate the amount of civilization requisite for the purpose. In the great islands of New Zealand, with their comparatively energetic race of inhabitants, the discovery of letters would most probably have been made, as among some rude nations of Sumatra, had the civilization necessary not been precluded by the absence, as in the smaller islands, of the larger animals for labour, and of all the cereal grasses for food.

The facility with which materials to write on are obtained in the countries occupied by the Malayan nations, has probably contributed something towards the early discovery of the art of writing. The want of them, on the contrary, is known to have proved a great obstacle to the progress of letters, and probably was so to their invention in temperate regions. The absence of a good material in ancient Europe hindered the invention of printing,—and its presence in China, no doubt, contributed largely to its early discovery in that country.

The Indian islanders write on palm leaves, which have received no other preparation than that of being dried and cut in slips—on the inner bark of trees, a little polished only by rubbing—on slips of the bamboo cane simply freed from its epidermis—and on stone, metal, and finally on paper.

The palm leaf employed is that of the lontar, or *Lontarus flabelliformis*. The Malay word is most likely a corruption of two words, *ron*, a leaf in Javanese, and *tal*, the proper name of this palm in Sanskrit. This seems corroborated by the Javanese name, which is written *rontal*. From the use of this word it might, at first sight, be imagined that the practice of writing on palm leaves was derived from the Hindus. But it happens that this word, with many others, wholly or partly Sanskrit, belongs to the ceremonial and factitious dialect of the Javanese language, a genuine native name, *kropyak*, existing for it in the ordinary one, so that no safe conclusion can be drawn from this etymology.

The instrument for writing with on the palm-leaf, on bark, and on the bamboo, is an iron style, and the writing is in fact a rude engraving, which is rendered legible by rubbing powdered charcoal over the surface, which falls into the grooves, and is swept off the smooth surface.

The Javanese alone understand the manufacture of a kind of paper. This is evidently a native art, and not borrowed from strangers, as is plain from the material, the process, and the name. The plant, in the Javanese language, is called *gluga*, *Broussonetia papyrifera*, and the article itself *dáluwān* changed into *dalančān* for the polite language. The process is not the ingenious one of China, India, Persia, and Europe; but greatly resembles that of making the Egyptian papyrus, and still more closely the preparation of the South-sea cloth—the raw material being indeed exactly the same as in the latter case. The true bark, cut in slips, is long, macerated, and beaten, and after being thus treated, slips of it are joined to each other over a smooth surface, and defects made good by patching. The fabric thus obtained is of a brownish grey colour, unequal in its texture, rigid, liable to destruction by insects, but strong.

With the exception of the Javanese, it does not seem that the natives of the Archipelago ever wrote with ink before they were instructed by the Arabs, no doubt from the absence of paper. The Javanese have a native name for “pen” and “ink,” *suwa* and *mañsi*, but, with the other nations, the only ones are Arabic, *kālām* and *dāwat*, often indeed greatly dis-

figured, as in the example of the Bugis, who convert them into kalah and dawah. The pen generally used is not a reed, as on the continent of Asia, or a quill as in Europe, but a stub obtained from the Aren palm—*Saguerus saccherifera*.

Even paper is generally known to the Indian islanders by its Arabian name of *kārtas*, so that it is probable that a true paper was imported long before the arrival of Europeans, although the natives were never taught the art of preparing it. At present European paper is in general use by all the more civilized nations, to the exclusion of Asiatic.